

## SUBJECT INDEX TO VOLUME 29

APC2 (carbon/PEEK), 2  
Ageing (temperature dependence), 79  
Anisotropy (flow-induced), 89  
Aramid composites, 161  
Axial shear (ud composites), 116, 123  
Axisymmetric analysis, 110

Bearing stiffness (in joints), 59  
Bend-tests, 92  
Bolted joints (fatigue), 45

CFRP, 257  
    bolted joints (fatigue), 45  
CSM glass/polyester composites, 79  
CVD matrix composites, 239  
Carbon/carbon composites, 239  
Carbon/Kevlar hybrids, 161  
Carbon/PEEK composites, 1  
Carbon fibre precursor (structure), 33  
Carbon fibre/phenolic composites, 189, 211  
Compliance calibration, 23  
Constraint (in joints), 63  
Correction factor (finite width), 141  
Crack  
    growth, 17  
    resistance, 26  
    modelling, 139  
Cylindrical bending (shells), 169

Damage (fatigue in bolted joints), 49  
Delamination fatigue cracks, 273  
Dynamic mechanical analysis (DMA), 239

Elliptical holes in laminates, 133  
End notch flexure test (ENF), 3  
ENF (finite element analysis), 5  
Equal rank assumption (fatigue life), 269  
Exact solutions (cylindrical shells), 169

FPF criterion, 138  
Fatigue  
    (CFRP), 257, 266, 273  
    (bolted joints), 45  
    crack propagation, 284  
    cracks (delamination), 273  
    damage, 266  
Fibre failure strain, 257  
Finite width correction, 141  
Flexural properties (hybrid composites), 161  
Fractography, 10, 31  
Fracture  
    criteria, 137  
    mechanisms, 140, 144  
    strength (notched composites), 133  
    toughness, 23  
    (interlaminar), 1

- Glass/epoxy composites, 19  
Glass-filled polyester (moisture absorption), 293  
Glass/polypropylene composites, 89
- Hole elongation (in joints), 60  
Hybrid composites, 161  
Hygrothermal (hydrothermal) ageing, 79
- Impact behaviour, 89, 95  
Infra-red analysis, 35  
Injection moulded composites, 89  
Interlaminar fracture, 1
- J-polymer composites, 161  
Joint deformation, 62
- Kevlar/carbon hybrids, 161  
Kinetic energy effects (fracture), 6
- Laminated cylindrical shells, 169
- Matrix failure strain, 257  
Microscopic analysis, 280  
Minimum strength model, 138  
Mode II shear fracture, 1, 6  
Moisture absorption, 293  
    (effect of stress), 301
- Notch sensitivity, 146
- Oxidative stabilization (of PAN), 33
- PEEK composites, 1  
Phenolic composites, 189, 211  
Pin-loaded joints, 45
- Pitch matrix composites, 239  
Point strength model, 137  
Polyacrylonitrile (PAN) fibres, 33  
Polypropylene composites, 89
- R-curves, 26  
R-ratio (fatigue), 273  
Rate sensitivity, 1  
Residual stress calculation, 312
- S/N curves (CFRP joints), 61  
Shear displacement (mode II cracks), 6  
Sheet moulding compound (SMC), 303  
Short-fibre composites, 17, 89  
Silica fibre/phenolic composites, 189, 211  
Single edge notch tests, 19  
Slippage (in bolted joints), 48  
SMC (moisture absorption), 303  
Strength of notched composites, 133  
Strength prediction, 142  
Stress  
    analysis, 134  
    intensity (fatigue), 277  
    ratio (effect of fatigue), 273
- Temperature loading, 123  
Thermal conductivity  
    (phenolic composites), 189, 211  
    models, 211  
Thermal diffusivity, 189, 211  
Thermal expansion (ud composites), 127  
Thermoviscoelastic behaviour, 103  
Transverse shear, 119  
Transverse uniaxial behaviour, 119
- Unidirectional composites, 103, 107
- X-radiography (fatigue damage), 266  
X-ray scattering, 35





## CONTENTS OF VOLUME 29

### *Number 1*

Rate Sensitivity of Mode II Interlaminar Fracture Toughness in Graphite/Epoxy and Graphite/PEEK Composite Materials . . . . .	1
A. J. SMILEY and R. B. PIPES (USA)	
Crack Growth Characterization in a Short Fibre Glass-Epoxy Composite . . . . .	17
A. N. KUMAR, R. K. PANDEY and A. NANDA (India)	
Structural Characteristics of Polyacrylonitrile (PAN) Fibers during Oxidative Stabilization . . . . .	33
H. JIANG, C. WU, A. ZHANG and P. YANG (People's Republic of China)	
Fatigue of Bolted Joints in (0/90) CFRP Laminates . . . . .	45
P. A. SMITH and K. J. PASCOE (Great Britain)	
Book Review . . . . .	71
Announcement . . . . .	73
Conference Diary . . . . .	75

### *Number 2*

Temperature Dependence of Hydrothermal Ageing of CSM-Laminate During Water Immersion . . . . .	79
K. K. PHANI and N. R. BOSE (India)	
The Influence of Flow-induced Anisotropy on the Impact Behaviour of Injection-moulded Short-fibre Composites . . . . .	89
P. J. HOGG (UK)	
Analysis of Thermoviscoelastic Behavior of Unidirectional Fiber Composites . . . . .	103
Z. HASHIN (Israel), E. A. HUMPHREYS and J. GOERING (USA)	
Fracture Strength of Composite Laminates with an Elliptical Opening . . . . .	133
SENG CHUAN TAN (USA)	
Book Review . . . . .	153
Conference Diary . . . . .	156

## Number 3

Asymmetric Hybrid Composite: A Design Concept to Improve Flexural Properties of Kevlar Aramid Composites . . . . .	161
GAD MAROM and ERIC J-H. CHEN (USA)	
Exact Solutions for Laminated Cylindrical Shells in Cylindrical Bending . . .	169
J. G. REN (People's Republic of China)	
Thermal Conductivity of Fibre-Phenolic Resin Composites. Part I: Thermal Diffusivity Measurements . . . . .	189
J. T. MOTTRAM and R. TAYLOR (Great Britain)	
Thermal Conductivity of Fibre-Phenolic Resin Composites. Part II: Numerical Evaluation . . . . .	211
J. T. MOTTRAM and R. TAYLOR (Great Britain)	
Conference Report . . . . .	233
Conference Diary . . . . .	236

## Number 4

The Evaluation of Two-dimensional Carbon-Carbon Composite Material by Dynamic Mechanical Analysis . . . . .	239
R. A. BIDDLE and W. L. JOHNSON, III (USA)	
Influence of Fibre and Matrix Failure Strain on Static and Fatigue Properties of Carbon Fibre-Reinforced Plastics . . . . .	257
CH. BARON, K. SCHULTE and H. HARIG (FRG)	
Effect of Stress Ratio on Near-threshold Propagation of Delamination Fatigue Cracks in Unidirectional CFRP . . . . .	273
MASAKI HOJO, KEISUKE TANAKA (Japan), CLAES GÖRAN GUSTAFSON (Sweden) and RYUICHI HAYASHI (Japan)	
Moisture Absorption in Unfilled and Glass-filled, Cross-linked Polyester . . .	293
V. F. JANAS and R. L. McCULLOUGH (USA)	
Book Review . . . . .	317
Conference Diary . . . . .	320
Subject Index . . . . .	323

